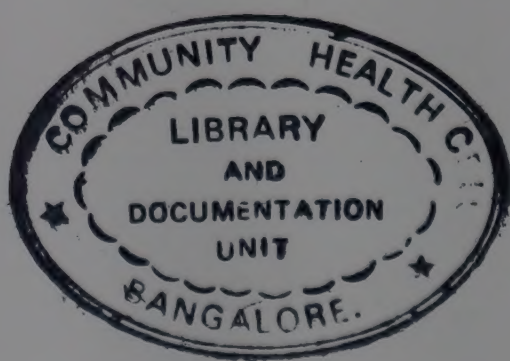

**UNIVERSALIZATION
OF ACCESS
TO
IODISED SALT**



A Mid-Decade Goal

DIS 335
N94



UNIVERSALIZATION OF ACCESS TO IODISED SALT

A Mid-Decade Goal

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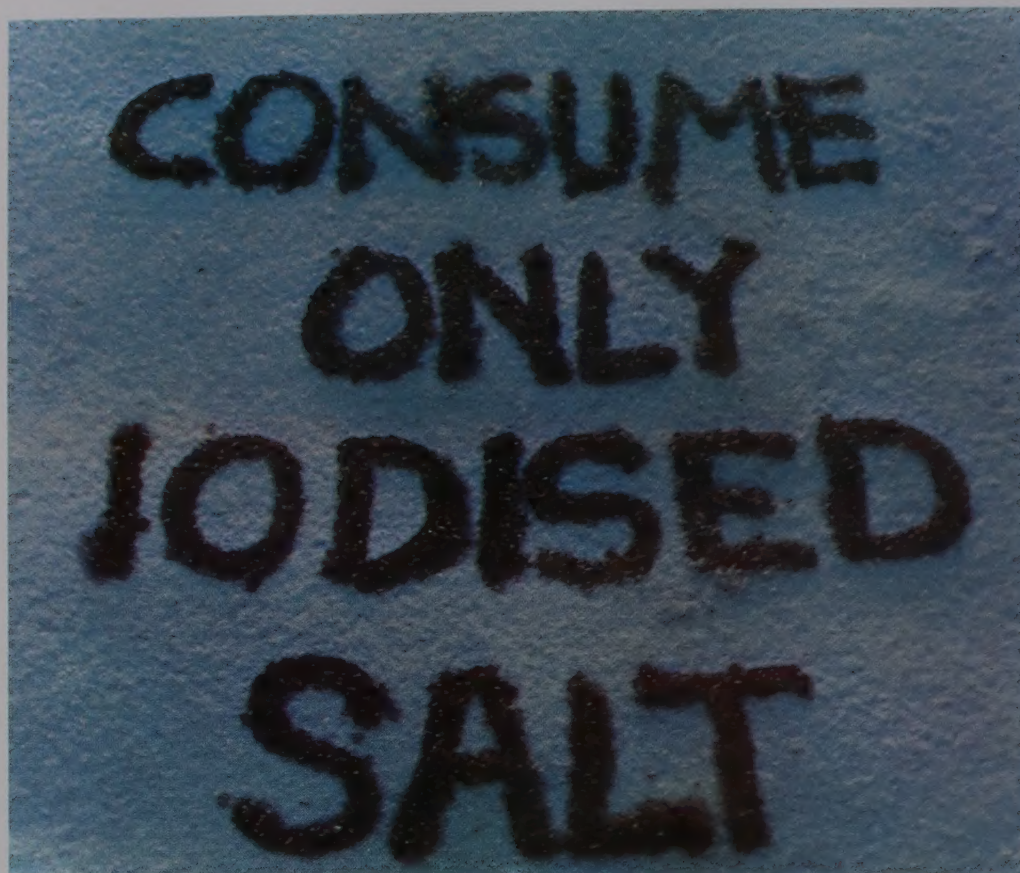
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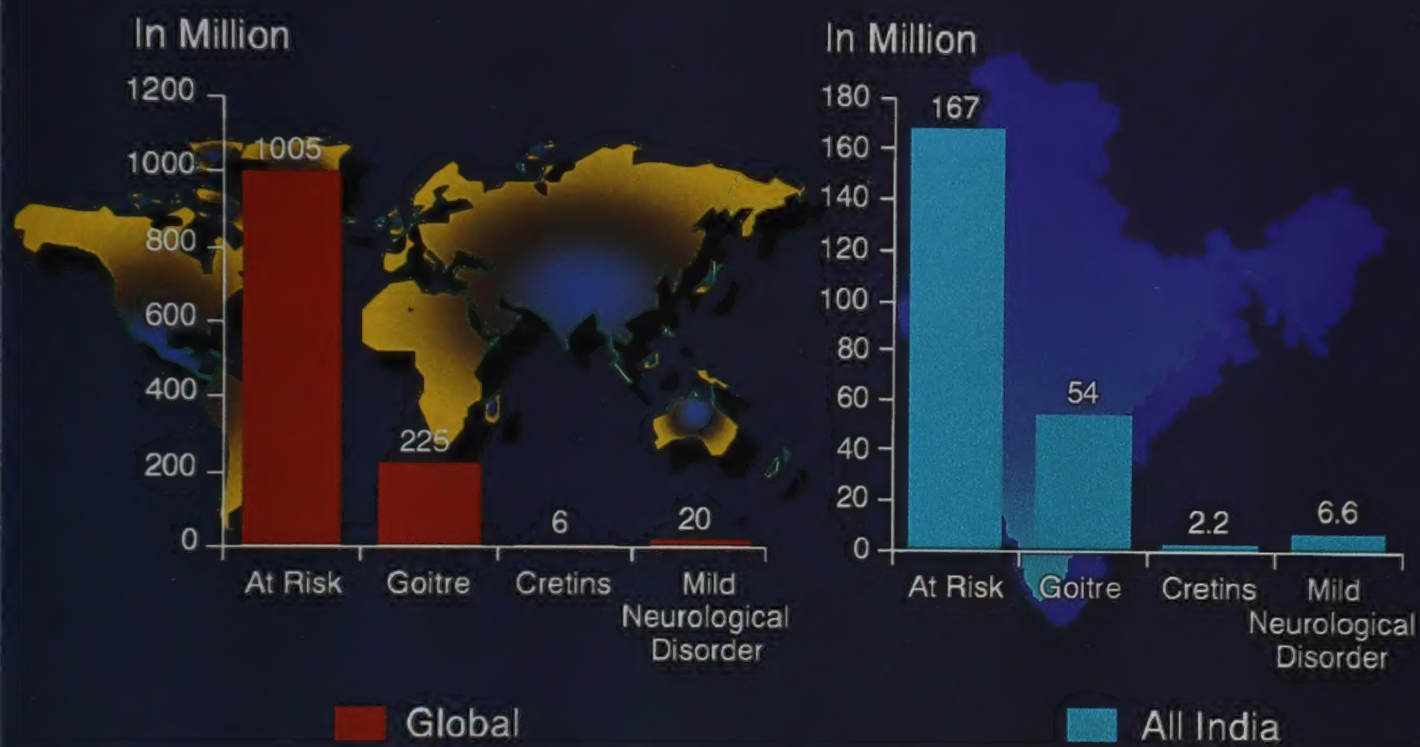


At least 30,000 babies are stillborn every year, globally, because their mothers lack iodine. Over 1,20,000 are born cretins worldwide - mentally retarded, physically stunted, deaf-mute or paralysed. Many more have IQs at least 10 points below their potential. Even when born normal, young children whose diets are low in iodine are held back by reduced intelligence, and live out their lives trapped in mental dullness and apathy. Universal consumption of iodised salt can prevent the widespread serious consequences of IDD and thereby enhance human development and the quality of a nation's resources.


THE MAGNITUDE OF THE PROBLEM

Universal iodisation of salt - which is both a preventive and a corrective measure for iodine deficiency - is a vital necessity in India today. Although the country has long recognized the public health importance of iodine deficiency, it is only recently that the full extent of the prevalence and magnitude of iodine deficiency disorders (IDD) with all their implications have become evident. In fact, India is one of the major endemic iodine deficiency countries in the world.

ESTIMATED PREVALENCE OF IDD



The general notion that iodine deficiency is confined to "endemic" areas needs to be replaced by the factual perception of widespread prevalence of IDD. No state in India is free from the ill-effects of IDD, and surveys, whenever undertaken, are continuously identifying new pockets of iodine deficiency.

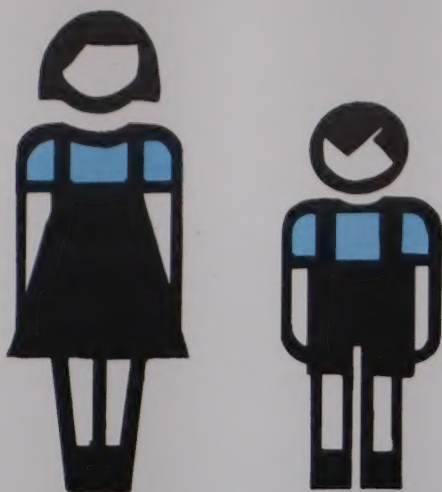
This newspaper report  best illustrates this point.

GOITRE GRABS DELHI BY THE SCRUFF OF THE NECK

EXPRESS NEWS SERVICE, NEW DELHI - 2.1.1994 Consider these facts : An estimated 63 million people in the country have iodine deficiency disorders, including goitre. Apart from the sub-Himalayan terrain, which is a potentially endemic region, the bad news is that the entire Union Territory of Delhi shows a high incidence of the disease.

A recent investigation conducted by the department of medicine, Maulana Azad Medical College, showed that out of the 2,550 thyroid cases reported in the hospital recently, nearly 1000 suffered from

goitre, 700 from thyrotoxicosis and 850 from hyperthyroidism. A similar study conducted by the Institute of Nuclear Medicine and Science (INMAS) two years ago, found 2839 goitre cases in Delhi and another 167 from Delhi-periphery. "We get 10 new cases a week", informs Dr. S.K. Aggarwal, professor at MAMC. Dr. Mohun Magdam of INMAS says the institute gets 15 new patients at the five-day OPD. "But most of them are referred cases. They come from other institutes," he adds. This sudden resurgence of the disease is cause for alarm.



Already, the number of primary school going children in endemic areas is estimated to be 40 million. The total IQ points lost (10 / child) amounts to 400 million. Moreover, as a result of insufficient iodine intake, there are more than 20,00,000 overt cretins in India. Universal iodisation of salt - the most effective low cost , long term solution to an important public health problem - is thus of supreme significance for the health of the nation and its people.

The deleterious effects of iodine deficiency which extend to other crucial areas such as child survival serve to underline the urgent need for universal iodisation of salt. The total number of stillbirths and neonatal deaths attributable to iodine deficiency is over 90,000. In fact, the need for iodine starts even before a child is born. When a child is deprived of its iodine needs during the period the brain is developing (last 6 months of pregnancy to the first post-natal year), the consequences could be disastrous. Lack of iodine interferes with the brain development of the foetus and results in the birth of iodine deficient babies who may be cretins characterized by mental deficiency, hearing defects, squint and stunted growth.

EFFECTS OF IODINE DEFICIENCY IN HUMANS AND ANIMALS

Animals

- Reduced yield of milk, eggs, meat and wool
- Reproductive failure

Pregnancy

- Spontaneous abortions
- Stillbirths
- Infant deaths
- Interferes with brain development of the foetus
- Birth of iodine deficient babies – Cretins

ILL EFFECTS OF IODINE DEFICIENCY

Adults

- Lack energy
- Tire easily
- Reduced productivity

Childhood

- Lowered IQ (10-15 points)
- Impaired learning and preschool performance
- Mental retardation
- Delayed motor development
- Growth failure or stunting
- Lack of energy
- Muscular disorders
- Paralysis
- Speech defects
- Hearing defects

All of the above disorders are preventable



Women in child bearing age and children under the age of 15 years are most susceptible to IDD. The most common and visible ill-effect is goitre - an abnormal swelling in the neck. A less obvious but more serious condition affecting millions of iodine deficient children include impaired mental function, poor intellectual performance, lowered IQ, muscular disorders and impaired coordination and sluggishness. In pregnancy, iodine deficiency causes spontaneous abortions, stillbirths, and infant deaths.

Iodine deficiency also affects animals and livestock, reducing their milk, meat, eggs and wool yields. Administration of iodised salt to animals improves their health and productivity and minimizes the number of stillbirths and miscarriages. Also, cattle who are fed iodised salt produce milk that is rich in iodine. Universalization of iodised salt thus has a significant effect on human development and the quality of a nation's resources.



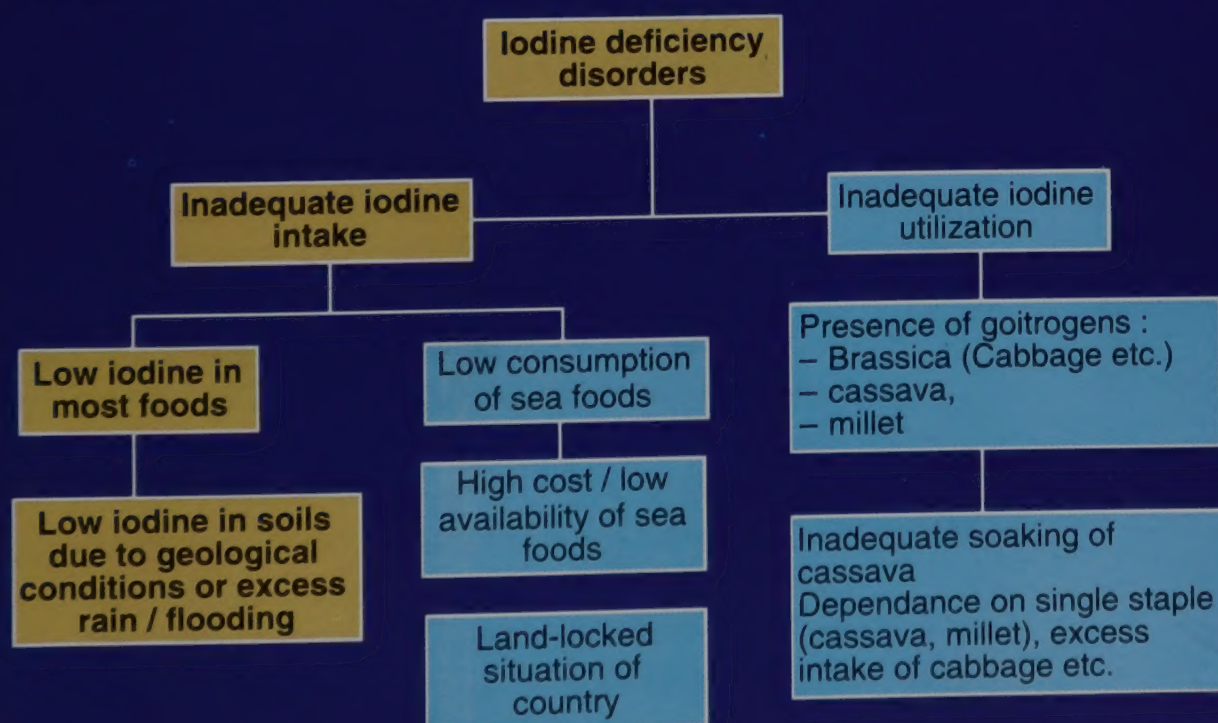
THE REMEDY FOR IODINE DEFICIENCY

Iodine is an essential dietary nutrient that helps the body to produce thyroxine - the hormone that regulates normal growth and development. The quantity of iodine is minute - 150 to 200 micrograms per day which amounts to a pinhead a month. An average lifetime requirement of an individual would add up to less than a teaspoonful of iodine. And yet iodine deficiency is amongst the major health problems faced by the developing world with more than one billion people at risk.



Iodine deficiency results from geological rather than social and economic conditions. The problem is aggravated by environmental factors such as accelerated deforestation and soil erosion. Unlike nutrients such as iron, calcium or the vitamins, iodine does not occur naturally in specific foods; rather, it is present in the soil and is imbibed through foods grown on that soil. The ideal situation is where the daily needs of iodine are met from the natural foods grown in iodine rich soils.

CAUSAL ANALYSIS OF IODINE DEFICIENCY DISORDERS (IDD)



IODINE CONTENT IN FOODS FROM GOITROUS AND NON-GOITROUS REGIONS (PART PER BILLION OF DRY MATTER)

Kind of food	Goitrous regions	Non-Goitrous regions
Wheat	1-6	4-9
Oats	10	23-175
Carrots	2	170
Potatoes	85	226
Butter	140	
Lettuce		618
Cabbage		776
Cranberries		26-35
Asparagus		946
Radishes		994
Tomatos		379
Milk	265-322	572
Sea Foods		
Cod		5350
Salmon		570-2200
Shrimp		1100
Cod Liver Oil		7670
Cod Liver Oil		3000-13000

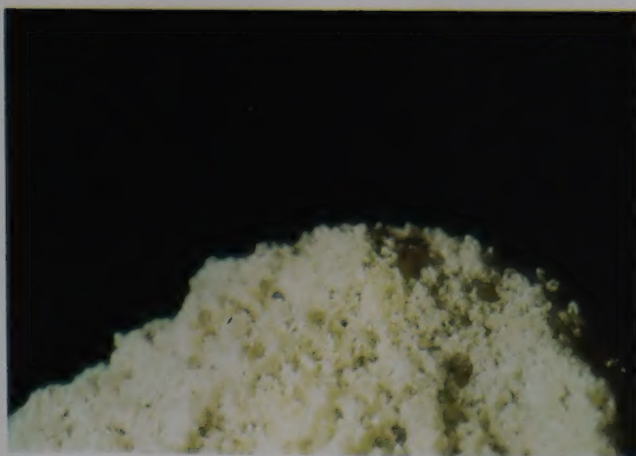
Food grown in iodine deficient regions can never provide enough iodine to the population and livestock living in such areas. Thus, if an area is iodine deficient, IDD cannot be eliminated by changing dietary habits or eating certain kinds of foods grown in that area. The correction has to be achieved by supplying iodine through an external source. This can be done by fortifying a commonly consumed food with iodine.

Iodisation of salt is a long term and sustainable low cost solution which will ensure that iodine reaches the entire population and is ingested on a regular basis. Fortification of salt with iodine has been extremely successful in eliminating iodine deficiency in the developed world.

SALT AS A SUITABLE MEDIUM FOR IODISATION

Salt has been accepted as the most suitable medium for the introduction of iodine into other diet for a number of reasons:

1. It is one of the few commodities that comes closest to being universally consumed daily by all sections of society irrespective of economic level.
2. Since the production of salt is limited to fewer centres than other food products, a fixed dosage of iodine can be added to the salt which will then reach a majority of the population all over the region or country.
3. The mixing of an iodine compound to salt is a simple operation without any chemical reactions.



4. The addition of iodine does not change the colour, taste or odour of common salt, thus making it acceptable to all.
5. The cost of iodising salt is low.

COST OF IODISED SALT

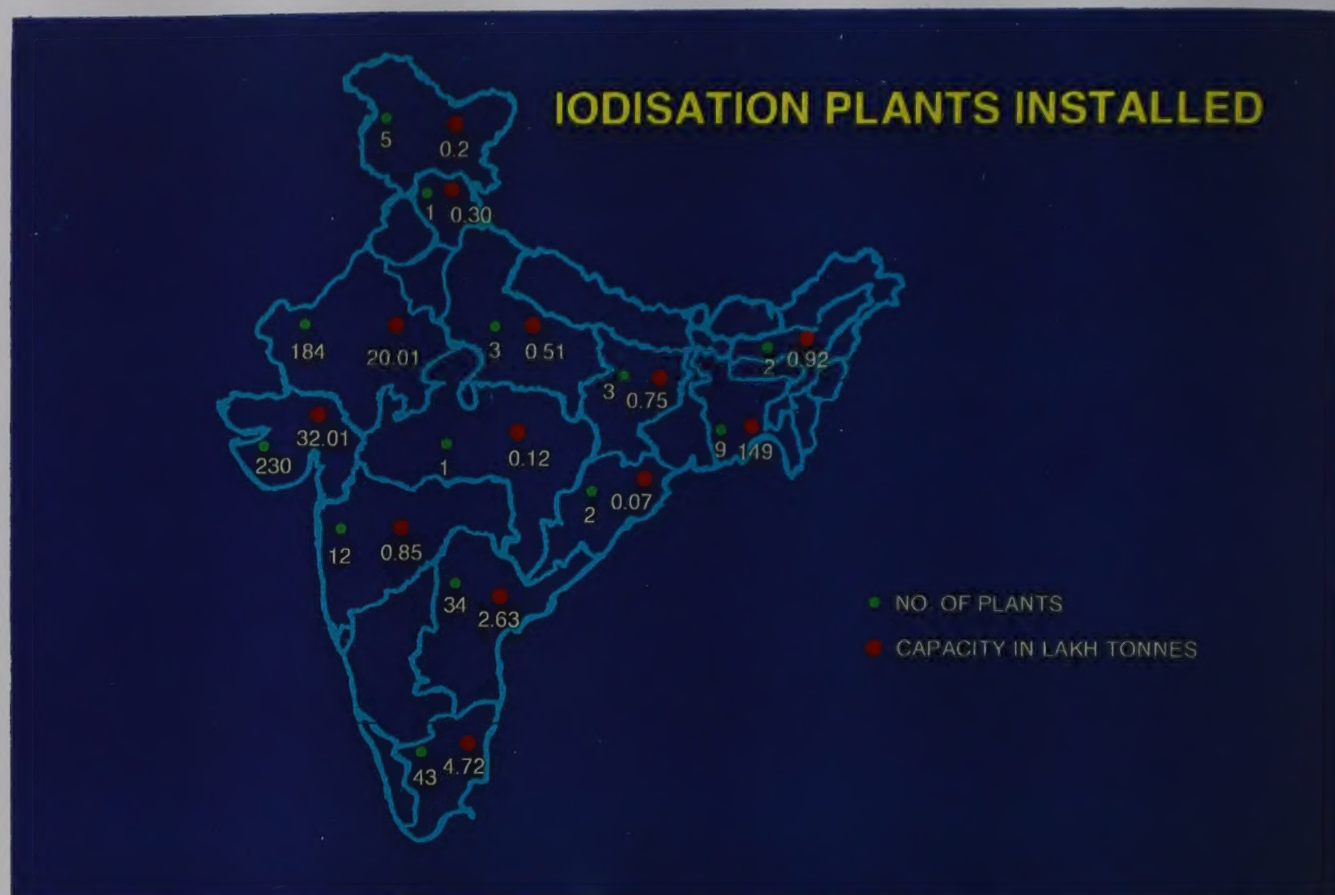
PERCENTAGE DISTRIBUTION OF VARIOUS COMPONENTS



6. The level of iodine in iodised salt is well within the safe limits. In India, common salt is iodised with potassium iodate to an iodine content level of 30 ppm (50 ppm potassium iodate) to allow for iodine loss and ensure that by the time the salt reaches the retail level it still has at least 15 ppm of iodine (25 ppm potassium iodate). Even if there is no loss of iodine in transit or storage, and taking only cooking losses into account, the iodine level in the salt is still safe. In 1991, it was stated categorically by Dr. Lewis Braverman, Chief of the Endocrinology Department at the University of Massachusetts Medical Centre that *"a person has to consume at least 10 to 15 times the normal daily dosage if iodine were to trigger hyperthyroidism"*. Indian medical opinion also holds that *"rarely iodine supplementation causes symptoms of hyperthyroidism to appear. But such a risk, though real, is minimal"*-BerryJ.N

India imports crude iodine and the imported iodine is converted into potassium iodate by the electro-chemical process. There are 20 agencies recognised by the Salt Department as suppliers of potassium iodate, who import iodine and convert this into potassium iodate, which is then supplied

for iodisation to salt manufacturers, traders and repackers. Once it is imported, availing concessional customs duty, potassium iodate can be used only for iodisation of salt and no other purpose. One kilogram of potassium iodate is required for iodising 20 tonnes of salt at the 50 ppm level. The Bureau of Indian Standards has prescribed specifications (IS-13057 : 1991) for food grade potassium iodate used in the blending of edible common salt.



PROGRESS IN UNIVERSALIZATION OF IODISED SALT

The strategy of fortification of salt with iodine has been adopted by the Government of India for prevention of IDD. The roots of universalization of salt in India originated when, in 1954, a prospective study was undertaken in a population of 1,00,000 in the Kangra Valley of Himachal Pradesh, by Prof. V. Ramalingaswamy and his associates. The aim of the study was to substantiate the role of iodine deficiency as the causative factor of endemic goitre in the Himalayan belt and to study the effectiveness of iodine prophylaxis. After six years of supplying three zones in the study area respectively with common salt, salt fortified with potassium iodide and potassium iodate, it was established that the goitre prevalence rate in zones supplied with fortified salt had been reduced appreciably, while the zone supplied with common salt registered an increase in the prevalence of goitre. The study also revealed that potassium iodate was a more effective agent than potassium iodide. Following the landmark Kangra Valley studies, and relying on its findings, the Government of India

launched the National Goitre Control Program in 1962 and began supplying iodised salt - the universally recognized medium of dietary Iodine supplementation - to the goitre - endemic areas in the sub - Himalayan belt. When endemic goitre was found prevalent in almost every state of India, the Government of India reviewed its policy and decided to allow private sector participation in the production and distribution of iodised salt and adopted the policy of universal iodisation of salt under the National Goitre Control Program (NGCP)

MAJOR INITIATIVES AT THE GOVERNMENT LEVEL

During the eighties, a number of significant steps were adopted by the Government of India as part of its IDD Policy. In addition to the permission accorded in 1983 to the private sector to produce iodised salt, the other important initiatives include :

- ♦ Introduction of subsidy on the iodising chemical upto 1992.
- ♦ Higher priority rail quota for salt movement (which now ranks second to defence movement in priority.
- ♦ In 1986, the Salt Commissioners Office was identified as the nodal agency for monitoring production, quality of iodised salt at the production sources, distribution, and payment of subsidy to iodised salt manufacturers.
- ♦ Inclusion of goitre control in 1986 in the "20 Point Programme" of the Prime Minister under "Health for All by 2000 A.D."
- ♦ In 1986, customs duty on the import of iodine was reduced from 140% to 25%.
- ♦ In 1988, the Prevention of Food Adulteration Act (PFA) was amended to specify that iodized salt should contain not less than 30 ppm Iodine at manufacturing level and 15 ppm iodine at retail level.
- ♦ In 1989, the Ministry of Health approved the "Smiling Sun" logo for easy identification of iodised salt by the public.



CURRENT STATUS OF THE IDD CONTROL PROGRAMME

The National Goitre Control Programme, referred to as the National Iodine Deficiency Disorders Control Programme (NIDDCP) since April 1992, is being implemented by the Department of Health. The objectives of the NIDDCP include:

- ♦ Supply of iodised salt in place of common salt to the entire country. The emphasis will be on establishing IDD plants at consumption level with active private sector participation.
- ♦ Re-survey to assess the impact of supply of iodised salt.

The Government of India has been repeatedly advising state governments to establish IDD cells in their territories and issue ban notifications as early as possible. Several states and Union Territories have already joined the program and issued Notifications under the PFA Act, banning the sale of common salt as an item of food within their territories either in full or in part.

STATES AND UTs COVERED UNDER THE BAN NOTIFICATION - PFA ACT. POPULATION COVERED & REQUIREMENT OF IODISED SALT

State / UT	Extent covered	Population covered	Iodised salt requirements (TPA)*
Assam	Full	22,294,562	1,33,767
Arunachal Pradesh	Full	858,392	5,150
Bihar	Full	86,338,853	5,18,034
Haryana	Full	16,317,715	97,906
Himachal Pradesh	Full	5,111,079	30,666
J & K	Full	7,718,700	46,312
Karnataka	4 Districts	5,412,699	32,478
Maharashtra	17 Districts	39,738,022	2,38,428
Madhya Pradesh	Full	66,135,862	3,96,816
Manipur	Full	1,826,714	10,960
Meghalaya	Full	1,760,626	10,563
Mizoram	Full	686,217	4,117
Nagaland	Full	1,215,573	7,293
Punjab	Full	20,190,795	1,21,145
Rajasthan	Full	43,880,640	2,63,284
Sikkim	Full	405,505	2,421
Tamil Nadu	2 Districts	4,819,150	28,920
Tripura	Full	2,744,827	16,468
Uttar Pradesh	Full	138,760,417	8,32,562
West Bengal	Full	67,982,732	4,07,896
Union Territories			
Chandigarh	Full	640,725	3,844
Dadra & Nagarhaveli	Full	138,542	831
Delhi	Full	9,370,475	56,222
Lakshadweep	Full	51,681	310
Daman & Diu	Full	101,439	608

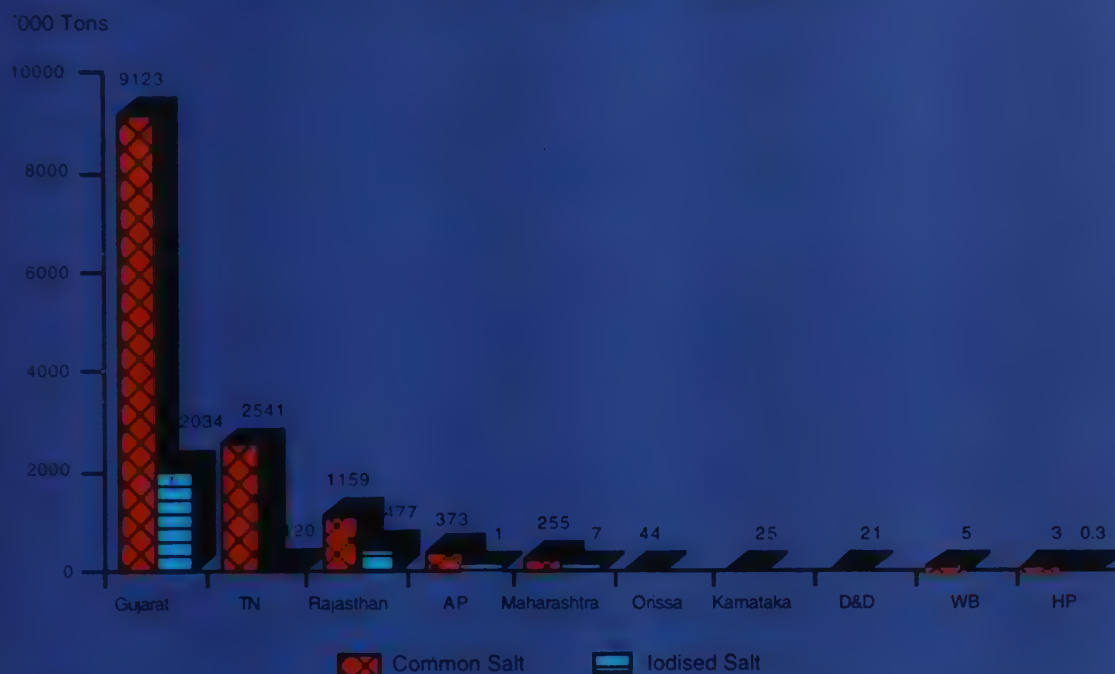
* TPA = Tons per annum

By September 1993, about 65 percent of the total population in the country had been covered in the Government of India's drive to universalize iodised salt.

While the progress in universalization of iodised edible salt has been noteworthy, with availability rising from 5 % in 1985 to over 50 % currently, substantial targets need to be met if the goal of universal access to iodised salt is to be achieved in the two years that remain till 1995.

At the macro level, the salt producing areas of India are located primarily in the states of Gujarat, Tamil Nadu, Rajasthan, Andhra Pradesh, Maharashtra, Orissa, Karnataka and West Bengal.

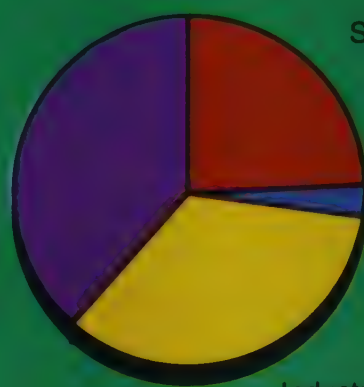
PRODUCTION OF COMMON SALT / IODISED SALT 1992



SALT PRODUCTION AND USAGE IN INDIA (IN LAKH TONNES)

TOTAL PRODUCTION : 135

Edible Consumption
52



Surplus
33

Export
4

Industrial Consumption
46

30% SALT PRODUCED BY NON-LICENSED SECTOR

Currently, the production of salt in the country is 13.5 million tonnes. The target for iodisation is 5.2 million tonnes, with the capacity to iodize being 6.6 million tonnes. 30 percent of the salt is produced by the non-licensed sector. Overall, the private sector handles 94% of salt iodisation with the public sector handling a miniscule 6 %.

INTERNATIONAL EVENTS IMPART NEW DIMENSIONS

The Government of India's efforts to universalize iodisation of salt have acquired new dimensions from important international events :



◆ In May 1990, the 43rd World Health Assembly passed a Resolution commending the Governments, inter-governmental and bilateral agencies and non-governmental organisations for their efforts to prevent and control IDD. The Assembly decided to "aim at eliminating IDD as a major health problem in all countries by the year 2000".

◆ In September 1990, the historic World Summit for Children, convened by the United Nations, adopted a Plan of Action setting out the goals. Amongst the goals was "Virtual Elimination of IDD".



◆ The Government of India's commitment to universalize iodisation of salt by 1995 and eradication of IDD by the year 2000 was reflected in the second SAARC Conference on Children in South Asia, held in Colombo, Sri Lanka, in September 1992. The Conference declared "Universal Access of Iodised Salt by 1995".

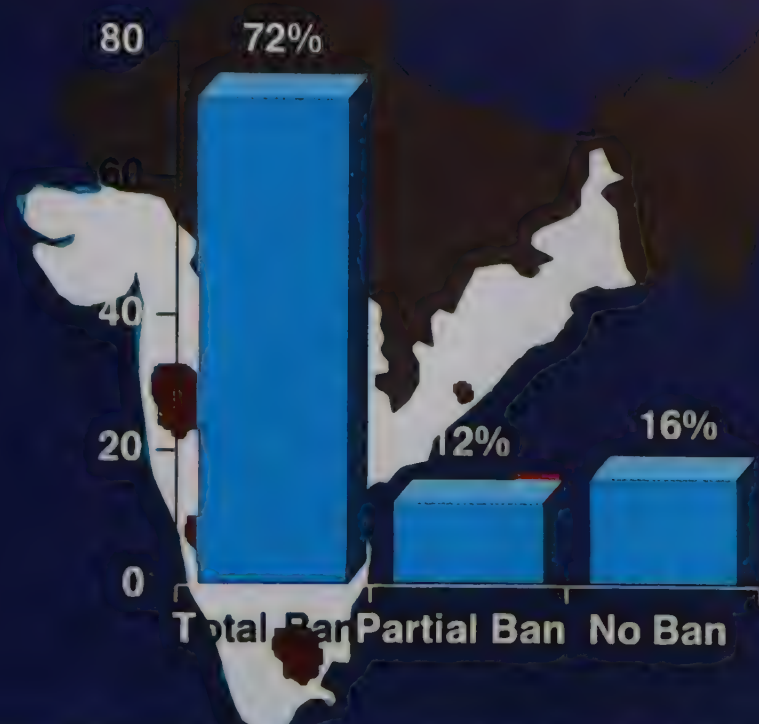
◆ Following the SAARC Conference, the Government of India introduced an amendment in the National Plan of Action for Children (NPA) to include "Universal access of Iodised Salt by 1995" as a specific goal.

ADMINISTRATIVE AND LEGISLATIVE MEASURES

As an important part of the strategy to universalize iodised salt and overcome constraints, the Government of India has introduced a series of administrative and legislative measures which includes :

- ◆ Steps to streamline production and distribution.
- ◆ Measures to ensure effective packing.
- ◆ Notification of a ban at state and union territory level on sale of non-iodised edible salt under Prevention of Food Adulteration (PFA) Act, 1954.

CURRENT STATUS ON BAN NOTIFICATION (TOTAL OF 32 STATES AND UNION TERRITORIES)



◆ Production

The production of salt in India is largely licensed by the Government, under Section 6 of the Central Excises and Salt Act, 1944. The production of salt without a license is in fact forbidden with the Commissioner of Salt being empowered to grant licenses. Producers with land not exceeding 10 acres are exempted from this Act and can manufacture salt without a licence.

However, there is no law which makes licensing mandatory for production of iodised salt. The Salt Commissioner and Officers authorised by him are empowered to grant "permission" to the setting up of salt iodisation plants by any person at any of the salt producing centres. At non-salt producing centres, permission is granted on the specific recommendation of the State Government. The decision to throw open the establishment of salt iodisation plants in the private sector in 1983, the introduction of a Government subsidy in 1983 towards the iodising chemical cost of iodised salt, and a high priority railway wagon quota for movement of iodised salt, saw a comparatively large proportion of entrepreneurs seeking "permission" from the Salt Department to put up iodisation plants. While the subsidy has been phased out since March 1992, the "permission" is necessary for availing the high priority rail wagon quota.

In realistic terms, it is not mandatory even today for a person intending to set up an iodisation plant anywhere in the country to take the "permission" of the Salt Commissioner, as long as he operates within the provisions of the local laws and PFA Act. Consequently, a large number of individuals have been producing salt without obtaining any permission from the



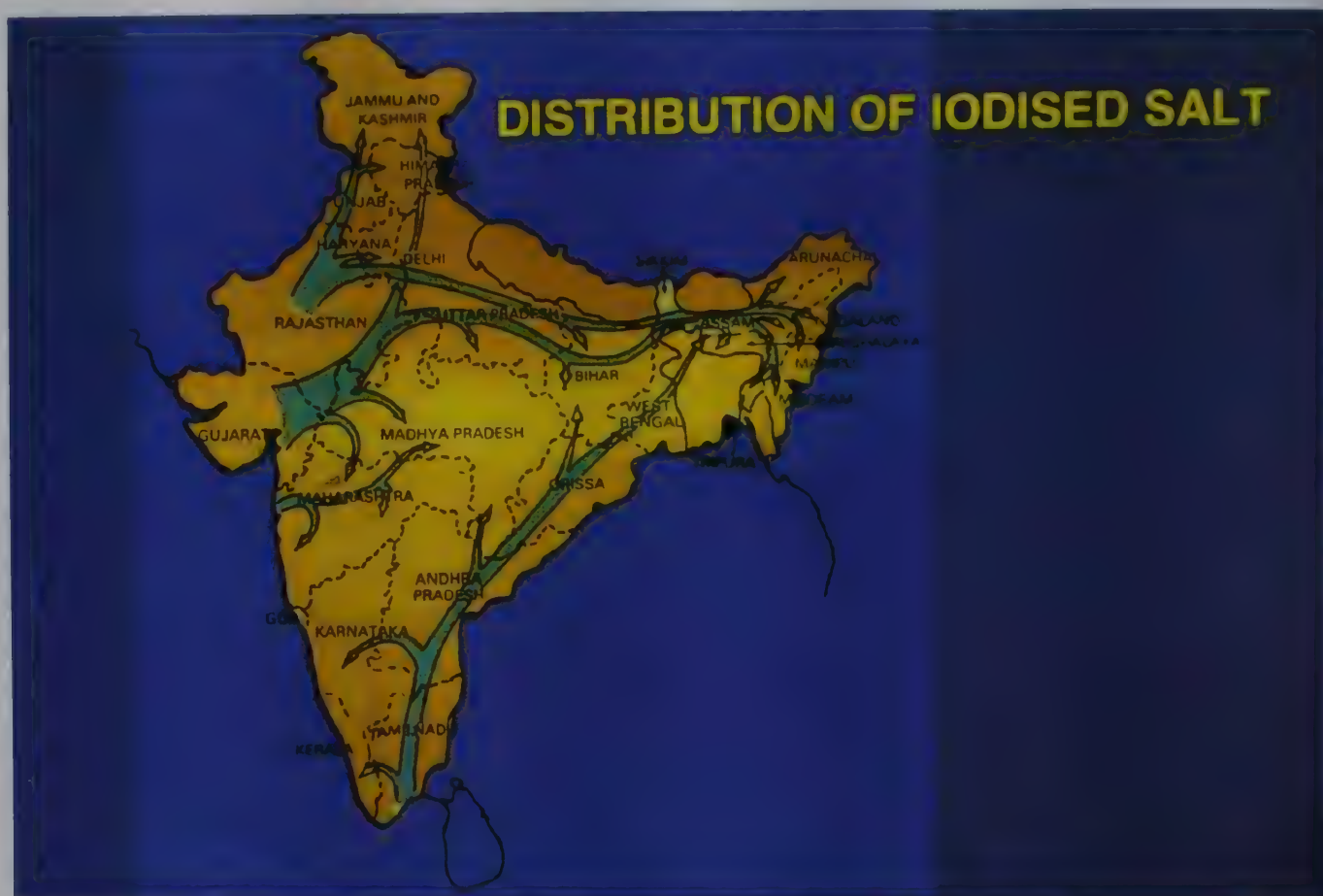
Blending of common salt with potassium iodate is being achieved in India through several methods :

- *Spray Mixing*
- *Submersion*
- *Drip Feeding*
- *Dry Mixing Process*

Salt Department. Iodisation plants that are outside the control of the Salt Department exist both at the salt producing centres and at the consuming centres.

◆ Distribution

In order to overcome bottlenecks and delays and thus facilitate the process of speedy distribution, the Salt Commissioners Office in coordination with the Ministry of Railways has developed a railway zonal scheme linking production centres and sources with the nearest distribution points, including availability of railway wagons. The need to study the feasibility and viability of a similar scheme for road transport has been recognized.



◆ Prevention of Food Adulteration Act sets standards for quality.

Whether one is a permission holder or not, all iodised salt producers and repackers are required to ensure that the salt marketed by them conforms to the standards prescribed under the Provisions and Rules of the Prevention of Food Adulteration Act (PFA), 1954. The PFA Act is implemented by the Food and Drugs Administration of the concerned states. The Food Inspectors are empowered to draw samples of iodised salt in accordance with procedures set out in the rules and get them analysed in the designated laboratory. If a specimen fails to conform to the specifications, either in terms of its iodine content or other characteristics, the Food Inspectors are empowered to launch prosecutions against the manufacturer/producer of such sub-standard iodised salt. A successful prosecution could mean imprisonment for a term which shall not be less than 6 months, but which may extend upto 3 years and a fine not less than Rs. 1000/-.

◆Packing

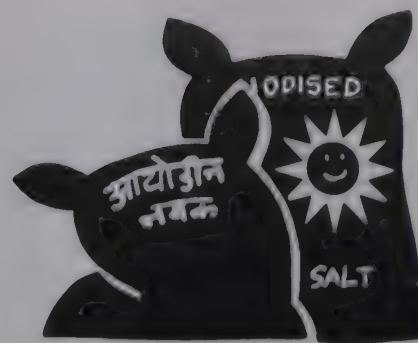
The packing of iodised salt for distribution is an important aspect of the IDD control program. In order to keep iodine losses to a bare minimum, the packing material must be safe, protective and compact.

The recommended packing material for iodised salt are :

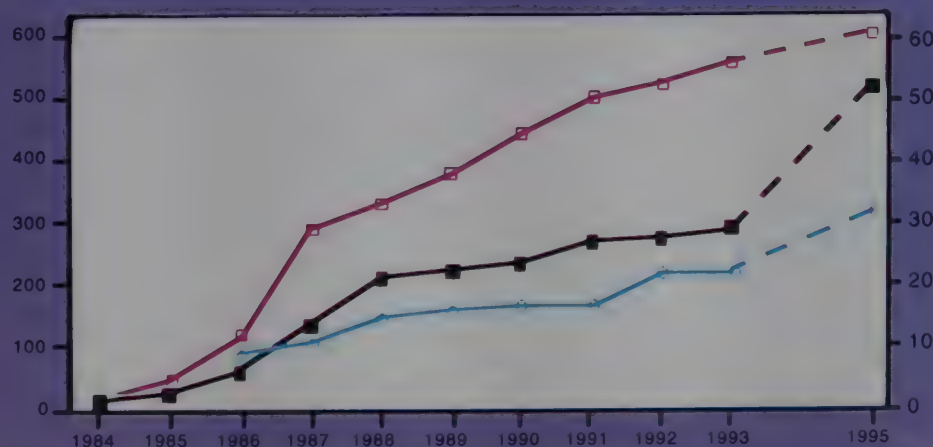
- HDPE bags, preferably laminated
- LDPE pouches and
- Polythene lined jute bags.

The normal retail packing units used are 500 grams and 1 kg. For bulk packing, the units approved at present are 40, 50 and 75 and 100 kgs.

At present, there are 10,000 producers (licensed and unlicensed) of common salt in India. Out of these only about 400 are registered producers of iodised salt. However, the total number of salt manufacturers (including producers and traders) is approximately 552.



PROGRESS & CURRENT STATUS OF UNIVERSALIZATION OF IODATION OF SALT 1993



No. of Iodised Mfrs.	15	43	115	285	327	373	439	497	517	552	>600
Production of Iodised Salt (L tons)	1.5	2.43	6.4	14.03	21.06	22.26	23.8	27.17	27.8	29	52**
States & UT Covered under Complete "Ban"			9	11	15	16	17	17	22	22	32

* Target - **52 L Tons

Goal for Universal Iodisation of Edible Salt

FUTURE STRATEGIES



In 1993, a major multi-sectoral programme was launched by the Government of India, with support from UNICEF, to intensify the IDD Control Programme (IDDCP). This includes support for achieving the goal of Universal Access to Iodised Salt by 1995, and intensification of IDD Control Programme implementation in 106 districts of 13 endemic states. Stress will be laid on supply, monitoring and creation of demand for iodised salt with a special focus on multi-sectoral programme participation and coordination.

Such strategies for the future could go a long way towards ensuring that India achieves iodisation of its entire requirement (52 lakh tonnes) of edible salt instead of allowing the present gap in the current production (28 lakh tonnes) and total capacity (66 lakh tonnes) to persist. Future strategies should lay emphasis on :

- ◆ 1. A complete ban order on sale of non-iodised edible salt in all the states and especially in the major salt producing states such as Gujarat and Tamil Nadu. A complete ban notification will lead to an upswing in the market demand for iodised salt. Of the three major salt producing states (Gujarat - 68 percent; Tamil Nadu - 15 percent and Rajasthan - 12 percent), a complete ban order on sale of non-iodised salt has been issued in only one of the states, i.e. Rajasthan. The states and union territories which are yet to issue notifications banning sale of common salt for edible purposes in their entire jurisdiction are as follows :

STATE AND UTs NOT COVERED UNDER THE BAN NOTIFICATION PFA ACT

State / UT	Extent of coverage to be achieved	Population yet to be covered	Iodised salt requirements (TPA)*
Gujarat*	Full	41,174,343	247,047
Karnataka	Excluding 4 distt.	39,393,769	236,364
Goa	Full	1,168,622	7,012
Kerala*	Full	29,032,828	174,204
Maharashtra	Excluding 17 distt.	39,010,193	234,061
Tamil Nadu	Excluding 2 distt.	50,819,168	304,920
Orissa*	Full	31,512,070	189,072
Andhra Pradesh*	Full	66,354,559	398,130
Union Territories			
Pondicherry	Full	807,045	4,842
Andamans	Full	279,111	1,675

- * Government of Gujarat had notified Dangs, Valsad, Surat, Bharuch, Baroda and Panchmahal districts. But the notification was not renewed after March / May 1992.
- * Though the Kerala Government had identified Ernakulam district as Goitre Endemic, no formal notification has been issued under the PFA Act.
- * Government of Orissa had issued two notifications (1989 & 1991) covering 13 districts. But the ban orders have not been effectively implemented.
- * Government of Andhra Pradesh have notified certain villages and Tribal areas in the Districts of East Godavari, Visakhapatnam and Adilabad. The Notification is valid upto October, 1994.
- * TPA = Tons per annum.

Tamil Nadu has recently taken significant steps towards the goal of universalization of iodised salt. On 11th Nov., 1993, the Chief Minister of Tamil Nadu released a 15 point Programme for Child Welfare. The Programme lists elimination of iodine deficiency as a major goal.

◆ 2. Strict ban enforcement is essential. This calls for developing an effective system of checks and control and greater awareness of the importance of iodised salt on the part of salt producers, wholesales, traders, retailers and the general public.

◆ 3. PFA is limited to human consumption. Legal measures should be extended to ensure that all salt sold for animal consumption is iodised.

◆ 4. Creating a demand for iodised salt amongst the community is of vital importance. A social marketing campaign is being initiated to continuously sensitise and inform the following critical groups about IDD, their insidious ill effects and the need to consume iodised salt as preventive measures :

- ◆ Policy makers and administrators including District officers.
- ◆ Salt manufacturers, wholesalers, traders, retailers.
- ◆ Food Inspectors.
- ◆ Field level workers including school teachers,
- ◆ Anganwadi workers (child centre workers), paramedical workers.
- ◆ Food and civil supply inspectors
- ◆ Voluntary organizations

Together, they can play a crucial key role in universalization of iodised salt. Their participation and cooperation in the IDD Control Programme is therefore a virtual necessity.

In addition, efforts are being made to generate awareness among the community for consuming only iodised salt. A District level awareness generation capacity involving functionaries of health and other development programmes such as the Integrated Child Development Scheme (ICDS), Development of Women and Children in Rural Areas (DWCRA) Urban Basic Services (UBS), formal and non-formal education is being developed and implemented to create positive consumer demand and ensure consumption of iodised salt by the total population.

In India, a dual market still exists in which uniodised salt which is cheaper than iodised salt, can be purchased. But the benefits of consuming iodised salt, even though it is more expensive than uniodised salt, are immeasurably greater. Awareness of the health priority aspect of iodised salt, which

ELIMINATION OF IODINE DEFICIENCY

GOAL : Tamil Nadu Government will ensure that iodised salt of prescribed quality is available all over Tamil Nadu for prevention of iodine deficiency.

1995 : Ban sale of non-iodised salt in the State.

1998 : Achieve satisfactory iodisation levels in at least 90% of salt tested in market places in identified endemic districts.

2000 : Universal Consumption of iodised salt.



outweighs the cost factor, among the public can result in the creation of a significant consumer demand for iodised salt. The awareness generation campaign is thus of vital importance in creating a demand for iodised salt and consequently, the success of the IDD Control Programme and universalization of salt.

- ◆ 5. Establishment of a monitoring system to monitor production and distribution of iodised salt. Registration of all iodisation units including repacking units would facilitate monitoring of quality control.

For rapid testing of salt, iodine spot testing kits to frontline workers of Health, ICDS, UBS, community leaders, school children, school teachers and retailers is being encouraged for monitoring the quality of salt and ensuring accessibility.

- ◆ *The iodine testing kit contains a vial with a chemical solution. One drop of chemical solution turns a salt sample violet if it contains iodine. For assessing the iodine level, the intensity of the violet colour developed as a result of this reaction is compared with the colour strip indicating levels of iodine concentration, and whether iodine is present or absent. Using the kit, iodine content of the salt varying from 15-30 ppm can be detected even at the household level.*

Along with complete ban notifications and their strict enforcement, future strategies can be encapsulated as follows :

Production Level	Distribution & Marketing Level	Consumption Level
<p>Establishing a system for monitoring production of iodised salt</p> <p>Improvement and recognition of non- conventional methods of iodisation</p> <p>Development of suitable iodisation system for small manufacturers</p> <p>Encouraging establishment of iodisation plant at consumption centres</p> <p>Encouraging quality monitoring by the use of Iodine testing kits</p> <p>Bringing unauthorised iodised salt manufacturers (including repackers) under the administrative fold of the nodal agency</p> <p>Proper accounting and monitoring of road movement & industrial consumption</p>	<p>Sensitization & involvement of wholesaler / traders in monitoring</p> <p>Social marketing of iodised salt at district level</p> <p>Reducing infiltration by Streamlining movement of industrial salt / road movement</p> <p>Packaging of salt in standard 1 Kg. polythene packs</p> <p>Timely and periodical supply of covered rail wagons</p> <p>Promoting correct storage practices at wholesale and retail level</p> <p>Promoting usage of iodine test kits</p>	<p>Implementation of monitoring information system - Involvement of community (School children) frontline workers, retailers, traders</p> <p>Promoting usage of iodine testing kits from manufacturers to consumer level</p> <p>Advocating correct storage practices at house hold level</p>

The Ultimate Challenge

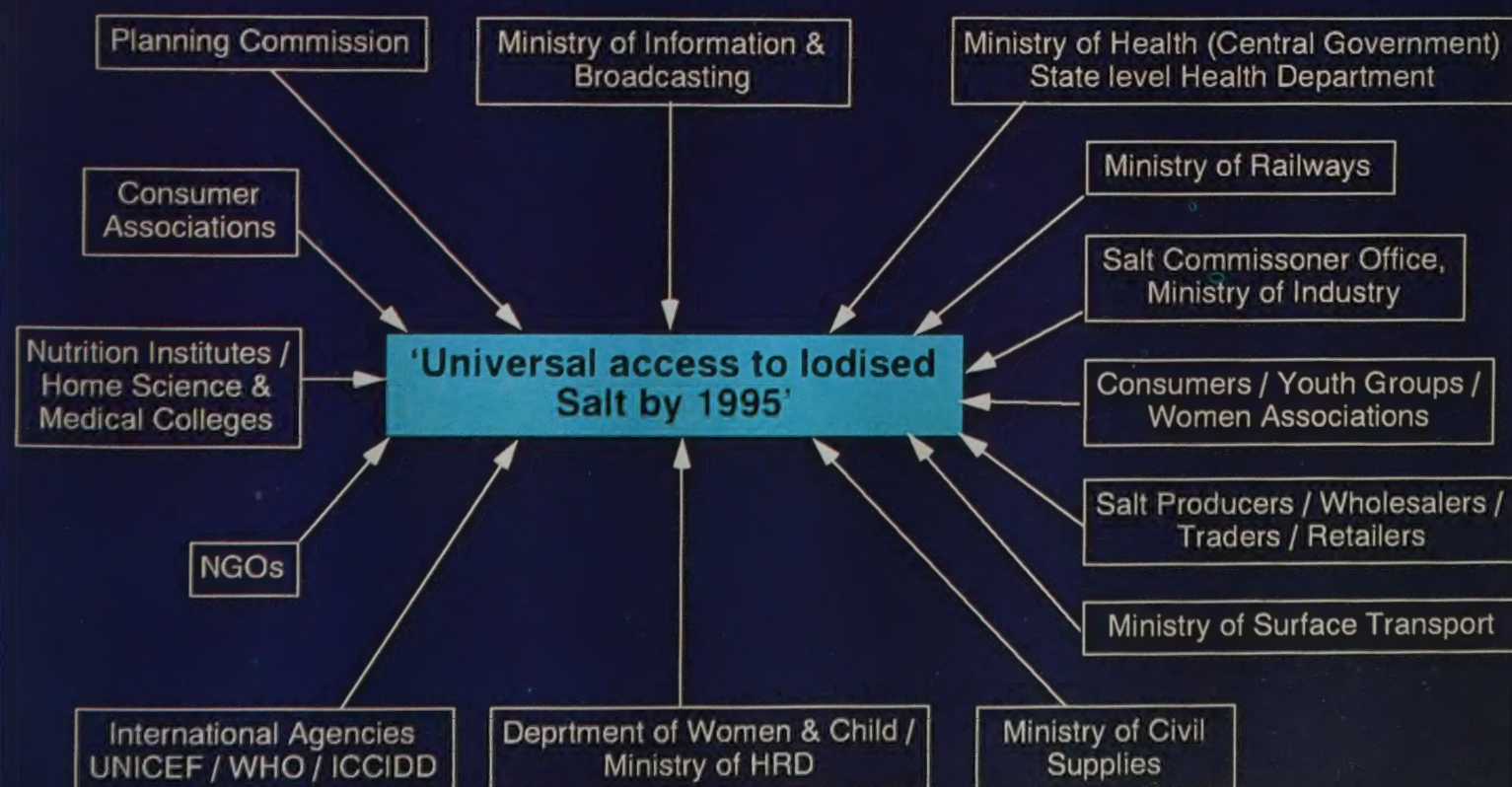
The responsibility of implementing the programme rests with the Ministry of Health, Directorate General of Health Services, New Delhi, in coordination with other agencies and sectors.

As Professor N. Kochupillai, Head of the Department of Endocrinology and Metabolism, AIIMS, New Delhi, has observed "Effective implementation of the recently adopted policy of universal iodisation of edible salt can save millions of lives of innocent newborns from mental subnormality and thus vastly improve the quality of human resource in endemic regions of our country".

The goal of universal access of iodised salt by 1995 is achievable as is evident in the existing infrastructure, policies, and potential capacity. The challenge lies in effective coordination between nodal ministries, departments, agencies, groups and others involved in the endeavor to reach the mid decade goal of universal access of iodised salt.



WE ALL MUST ACT NOW





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